

8. Unique Stream Segments, Unique Reservoir Sites, and Legislative Recommendations

Regional Water Planning Guidelines, Title 31, Part 10, Chapter 357 of the Texas Administrative Code, call for regional water planning groups to make recommendations regarding ecologically unique river and stream segments; unique sites for reservoir construction; and regulatory, administrative, or legislative actions that will facilitate the orderly development, management, and conservation of water resources.

Recommendations of the Region C Water Planning Group and the reasons for them are presented in this section in the following order:

- Summary of recommendations
- Recommendations for ecologically unique river and stream segments
- Recommendations for unique sites for reservoir construction
- Policy and legislative recommendations.

8.1 Summary of Recommendations

Recommendations for Ecologically Unique River and Stream Segments

- Convene a working group comprised of representatives of TWDB, TPWD, TCEQ, and the sixteen regions to bring clarity, purpose, and direction to the legislative mandate to “identify river and stream segments of unique ecological value.”

Recommendations for Unique Sites for Reservoir Construction

- Retain recommendations from the *2006 Region C Water Plan* for these reservoir sites:
 - Ralph Hall
 - Lower Bois d’Arc Creek
 - Marvin Nichols
 - Tehuacana
 - (Muenster Lake, also recommended in the 2006 plan, has been completed and is in operation.)
- Encourage affirmative votes by sponsors of these five proposed reservoirs to make expenditures necessary to construct or apply for required permits and avoid termination of unique reservoir site designations on September 1, 2015.

Policy and Legislative Recommendations

- Senate Bill One Planning Process
 - Encourage formation of a Working Group on Stream Segments of Unique Ecological Value
 - Support Water Conservation Task Force Recommendations regarding target for water conservation
 - Allow waivers of plan amendments for entities with small strategies.
 - Coordination between TWDB and TCEQ to determine the appropriate data and tools for use in regional water planning.
- TCEQ Policy and Water Rights
 - Legislature should remove some of the unnecessary barriers to interbasin transfers.
 - Water code should be changed to exempt certain water right permits from cancellation for non-use.
- State Funding and Water Supply Programs
 - Continue and expand State Funding for TWDB loans and State Participation Program.
 - More State Funding for water conservation efforts.
 - State Funding for reservoir site acquisition.
 - Consider alternative financing for large projects.
 - Adequate funding of Groundwater Conservation Districts
 - Funding for NRCS Structures
- Water Reuse and Desalination
 - Support research to advance reuse and desalination
 - Funding assistance for desalination and reuse projects.
- State and Federal Program – Water Supply Issues
 - Continued and increased State support for efforts to develop water supplies from Oklahoma.
 - Oversight of Groundwater Conservation District rule making.
 - Revise Federal Section 361(b) regulations on power plant cooling water.

8.2 Recommendations for Ecologically Unique River and Stream Segments

Texas Parks and Wildlife Department (TPWD) recommendations for 10 ecologically unique river and stream segments in Region C were published in *Ecologically Significant River and Stream Segments of Region C, April 2002*. These 10 river and stream segments,

along with the attributes that TPWD deemed qualifying for unique status, are listed in Table 8.1. The segments are also depicted in red in Figure 8.1. However, in the 2001 *Region C Water Plan*, and again in the 2006 *Region C Water Plan*, the Region C Water Planning Group decided not to recommend any river or stream segments as ecologically unique because of unresolved concerns regarding the implications of such designation. Through passage of Senate Bill 675, the Texas Legislature has clarified that the only intended effect of the designation of a unique stream segment is to prevent the development of a reservoir on the designated segment by a political subdivision of the state. However, the Texas Water Development Board regulations governing regional water planning require analysis of the impacts of water management strategies on unique stream segments which implies a level of protection beyond the mere prevention of reservoir development.

In preparing for the 2011 *Region C Water Plan*, the Region C Water Planning Group reviewed the 2006 recommendations of the other regional planning groups and directed its consultants to take the following actions with regard to ecologically unique river and stream segments:

- Develop scenarios of concern
- Meet with state agencies
- Review previously identified segments
- Consider additional segments
- Present possible candidate segments to the Region C Water Planning Group
- Receive comments
- Recommend action

The potential scenarios of concern involve the following features which could be located within, upstream, or downstream of a designated segment:

- Dams
- Pipeline crossings
- Water intakes
- New water outfalls
- Treated effluent outfalls

- Constructed wetlands
- Bed and banks transport of reservoir releases

These potential scenarios of concern were addressed by Region C consultants in a meeting with staffs of the Texas Water Development Board, Texas Parks and Wildlife Department, and Texas Commission on Environmental Quality (TCEQ) in August 2009. Ecologically unique river and stream segment legislation (Title 2, Chapter 16 of the Texas Water Code) and agency rules (Title 31, Part 10, Chapter 357 of the Texas Administrative Code) were also reviewed at the meeting. Conclusions from this meeting were as follows:

- TPWD plans no updates to its *Ecologically Significant River and Stream Segments of Region C, April 2002*. This report was summarized in Appendix W of the *2006 Region C Water Plan*.
- TPWD and TWDB staffs believe that ecologically unique river and stream segment legislation only impacts public financing of reservoirs.
- TCEQ staff position is to use all available information to regulate attributes of river and stream segments without regard to ecologically unique designation.
- Ecologically unique river and stream segment designation may influence public opinion.
- Ecologically unique river and stream segment legislation has not been tested in the courts.
- A statewide TWDB/TPWD/TCEQ/RWPG working group could help address concerns.

The Region C Water Planning Group recommends the formation of a working group comprised of representatives of TWDB, TPWD, TCEQ, and the sixteen water planning regions to bring clarity, purpose, and direction to the legislative mandate to “identify river and stream segments of unique ecological value.” Specifically, it is expected that the working group would:

- Research, verify, and publicize the intent of ecologically unique river and stream segment legislation.
- Research agency rules and recommend changes or clarifications where needed.
- Ensure common understanding of “reservoir” as used in ecologically unique river and stream segment legislation and agency rules.
- Identify the lateral extent of ecologically unique river and stream segment designation.
- Seek clarification of quantitative assessment of impacts on ecologically unique river and stream segments.

Table 8.1
Texas Parks and Wildlife Department Recommendations for Designation as Ecologically Unique River and Stream Segments
from *Ecologically Significant River and Stream Segments of Region C, April 2002* ⁽²⁾

River or Stream Segment	Description	Basin	County	TPWD Reasons for Designation ^a				
				Biological Function	Hydro-logic Function	Riparian Conservation Area	High Water Quality/Aesthetic Value	Endangered Species/Unique Communities
Bois d’Arc Creek	Entire length	Red	Fannin	X	X	X		
Brazos River	Parker/Palo Pinto Co. line to F.M. 2580	Brazos	Parker	X			X	X
Buffalo Creek	Alligator Ck.-S.H. 164	Trinity	Freestone	X	X			
Clear Creek	Denton/Cooke Co. line to Elm Fork Trinity R.	Trinity	Denton				X	
Coffee Mill Creek	Entire length	Red	Fannin			X		
Elm Fork of Trinity River	Headwaters of Lewisville Lake to Lake Ray Roberts Dam	Trinity	Denton			X		
Linn Creek	Buffalo Ck. – C.R. 691	Trinity	Freestone	X	X			
Lost Creek	Entire length	Trinity	Jack			X	X	
Purtis Creek	S. Twin Ck. to Henderson Co. line	Trinity	Henderson			X		
Trinity River	Freestone/Leon to Henderson/Anderson Co. line	Trinity	Freestone/Anderson	X		X		X

Note: a. The criteria listed are from Texas Administration Code Section 357.8. The Texas Parks and Wildlife Department feels that their recommended stream reaches meet those criteria marked with an X.

- Illustrate the value of ecologically unique river and stream segment designations.

8.3 Recommendations for Unique Sites for Reservoir Construction

In the *2006 Region C Water Plan*, the Region C Water Planning Group recommended designation of the following six unique sites for reservoir development:

- Muenster site on Brushy Elm Creek in Cooke County
- Ralph Hall site on the North Sulphur River in Fannin County
- Lower Bois d’Arc Creek (formerly called New Bonham) site on Bois d’Arc Creek in Fannin County
- Marvin Nichols site on the Sulphur River in Red River, Titus, and Franklin counties
- Fastrill site on the Neches River in Anderson and Cherokee counties
- Tehuacana site on Tehuacana Creek in Freestone County.

These six sites were subsequently recommended in the *2007 State Water Plan* and designated by the Legislature in Senate Bill 3 as unique reservoir sites necessary to meet water supply needs.

Muenster Lake was constructed on Brushy Elm Creek in Cooke County by the Muenster Water District and the USDA Natural Resources Conservation Service in 2005 and 2006, was filled in June 2007, and is now in operation. The reservoir impounds 4,700 acre-feet and is permitted for diversion of 500 acre-feet per year for municipal use. It floods 418 acres at the top of conservation storage. Water is supplied to the City of Muenster and other customers of the Muenster Water District in Cooke County.

Lake Ralph Hall would be located on the North Sulphur River in southeast Fannin County, north of Ladonia. The reservoir would yield 34,050 acre-feet per year and would flood 7,236 acres. Lake Ralph Hall is a recommended water management strategy for the Upper Trinity Regional Water District. The proposed lake would provide water to southeast Fannin County residents, as well as to customers of the Upper Trinity Regional Water District in the Denton County area.

Lower Bois d’Arc Creek Reservoir would be located on Bois d’Arc Creek in Fannin County, immediately upstream from the Caddo National Grassland. The proposed reservoir would yield 123,000 acre-feet per year and would flood 16,400 acres. The North Texas Municipal Water District would be the primary developer of lower Bois d’Arc Creek

Reservoir. The proposed reservoir would provide water to potential customers in Fannin County in addition to existing customers of the North Texas Municipal Water District.

Marvin Nichols Reservoir would be located on the Sulphur River upstream from its confluence with White Oak Creek. The dam would be in Titus and Red River counties and would also impound water in Franklin County. The proposed reservoir would yield 612,300 acre-feet per year (assuming Lake Ralph Hall is senior and Marvin Nichols Reservoir, site 1A, is operated as a system with Wright Patman Lake) and would flood 67,400 acres. The reservoir is a recommended water management strategy for the North Texas Municipal Water District, Tarrant Regional Water District, and Upper Trinity Regional Water District. It is also considered an alternative strategy for Dallas Water Utilities and the City of Irving. Approximately 80 percent of water supplied from Marvin Nichols Reservoir is expected to serve customers of wholesale water providers in Region C and approximately 20 percent would serve water needs in Region D.

Lake Fastrill would be located on the Neches River in Anderson and Cherokee counties downstream of Lake Palestine and upstream of the Weches dam site. The proposed reservoir would yield 148,780 acre-feet per year and flood 24,950 acres. The U.S. Fish and Wildlife Service has recommended development of the Neches River Wildlife Refuge along the Upper Neches River near the same area as the proposed Lake Fastrill. Recent court rulings have caused Lake Fastrill to no longer be considered a feasible strategy.

Tehuacana Reservoir would be located on Tehuacana Creek in Freestone County, south of the Richland-Chambers Reservoir. The proposed reservoir would yield 56,800 acre-feet per year and would flood 14,900 acres. Tarrant Regional Water District would be the developer of Tehuacana Reservoir. Water from the proposed reservoir would serve needs in Freestone County in addition to customers of Tarrant Regional Water District.

Recommendation. Region C encourages affirmative votes by sponsors of the proposed Lake Ralph Hall, Lower Bois d'Arc Creek Reservoir, Marvin Nichols Reservoir, Lake Fastrill, and Tehuacana Reservoir to make expenditures necessary to construct or apply for required permits for these reservoirs and avoid termination of unique reservoir site designation on September 1, 2015 (Section 16.051, Texas Water Code).

8.4 Policy and Legislative Recommendations

The Region C Water Planning Group discussed legislative and policy issues that impact the planning and development of water resources. The group offers the following policy and legislative recommendations, which are divided by topic.

Senate Bill One Planning Process

Encourage Formation of a Working Group on Stream Segments of Unique Ecological Value. The Region C Water Planning Group recommends the formation of a working group comprised of representatives of TWDB, TPWD, TCEQ, and the sixteen water planning regions to bring clarity, purpose, and direction to the legislative mandate to “identify river and stream segments of unique ecological value. “ Specifically, it is expected that the working group would:

- Research, verify, and publicize the intent of ecologically unique river and stream segment legislation.
- Research agency rules and recommend changes or clarifications where needed.
- Ensure common understanding of “reservoir” as used in ecologically unique river and stream segment legislation and agency rules.
- Identify the lateral extent of ecologically unique river and stream segment designations.
- Seek clarification of quantitative assessment of impacts on ecologically unique river and stream segments.
- Illustrate the value of ecologically unique river and stream segment designations.

Support Water Conservation Task Force Recommendation Regarding Target for Water Conservation. The Water Conservation Task Force ⁽⁷⁾ recommended targets for water conservation be considered as water suppliers as they set voluntary per capita water goals. The Task Force indicated that these voluntary targets should not be mandatory. Per capita water use is unique to each water supplier and each region of the State. A statewide per capita water use value is not appropriate for the State, considering its wide variation in rainfall, economic development, and other factors. The Region C Water Planning Group supports the decision of the Water Conservation Task Force that the targets included in their report should be voluntary targets rather than mandatory goals.

Allow Waivers of Plan Amendments for Entities with Small Strategies. Region C recommends that the Texas Water Development Board allow waivers for consistency

issues for plan amendments that involve projects resulting in small amounts of additional supply.

Coordination between TWDB and TCEQ Regarding Use of the WAMs for Planning.

The TWDB requires that the Water Availability Models (WAMs) developed under the direction of TCEQ be used in determining available surface water supplies. The models were developed for the purpose of evaluating new water rights permit applications and are not appropriate for water supply planning. The assumptions built into the WAM (full use of all existing water rights, full operation of priority calls at all times, full permitted area and capacity) do not always match the actual operations of supplies. The TWDB and TCEQ should coordinate their efforts to determine the appropriate data and tools available through the WAM program for use in regional water planning. The TWDB should allow the regional water planning groups some flexibility in applying the models made available for planning purposes.

TCEQ Policy and Water Rights

Requirements for Interbasin Transfers Introduced in Senate Bill One. In 1997, Senate Bill One introduced a number of new requirements for applications for water rights permits to allow interbasin transfers. The requirements are found in Section 11.085 of the Texas Water Code ⁽⁹⁾. The code includes many provisions that are not required of any other water rights, including:

- Analysis of the impact of the transfers on user rates by class of ratepayer.
- Public meetings in the basin of origin and the receiving basin.
- Simultaneous (and dual) notices of an interbasin transfer application in newspapers published in every county located either wholly or partially in both the basin of origin and the receiving basin, without regard to the distance or physical relationship between the proposed interbasin transfer and any such county's boundaries.
- Additional notice to county judges, mayors, and groundwater districts in the basin of origin.
- Additional notice to legislators in the basin of origin and the receiving basin.
- TCEQ request for comments from each county judge in the basin of origin.
- Proposed mitigation to the basin of origin.
- Demonstration that the applicant has prepared plans that will result in the "highest practicable water conservation and efficiency achievable..."

Exceptions to these extra requirements placed on interbasin transfers were made for emergencies, small transfers (less than 3,000 acre-feet under one water right), transfers to an adjoining coastal basin, and transfers from those portions of a county, city, or city's municipal retail service area located partially in the basin of origin, to those portions of the county, city or city's municipal retail service area located in the receiving basin.

The effect of these changes is to make obtaining a permit for interbasin transfer significantly more difficult than it was under prior law and thus to discourage the use of interbasin transfers for water supply. This is undesirable for several reasons:

- Interbasin transfers have been used extensively in Texas and are an important part of the state's current water supply. For example, current permits allow interbasin transfers of over 750,000 acre-feet per year from the Red, Sulphur, Sabine, and Neches Basins to meet needs in the Trinity Basin in Region C. This represents more than one-third of the region's reliable water supply.
- Current supplies greatly exceed projected demands in some basins of origin, and the supplies already developed in those basins can only be beneficially used as a result of interbasin transfers.
- Senate Bill One water supply plans for major metropolitan areas in Texas (Dallas-Fort Worth, Houston, and San Antonio) rely on interbasin transfers as a key component of their plans.
- Texas water law has always regarded surface water as "state water" belonging to the people of the state, to be used for the benefit of the state as a whole and not merely that area or region of the state where abundant surface water supplies may exist.
- The current requirements for permitting interbasin transfers provide unnecessary barriers to the development of the best, most economical, and most environmentally acceptable source of water supplies.
- Since no contested interbasin transfer permits have been granted under these new requirements since the passage of Senate Bill One, the meaning of some of the provisions and the way in which they will be applied by TCEQ are undefined.

The legislature should revisit the current law on interbasin transfers and remove some of the unnecessary, unduly burdensome, and counterproductive barriers to such transfers that now exist.

Cancellation of Water Rights for Non-Use. The Texas Water Code ⁽⁸⁾ currently allows the Texas Commission on Environmental Quality to cancel any water right, in whole or in part, for ten consecutive years of non-use. This rule inhibits long-term water supply planning. Reservoirs are often constructed to fully utilize the yield available at a given site

and are often constructed to meet needs far into the future. Many times, only part of the supply is used in the first ten years of the reservoir's operation, with the remainder allocated for future needs.

The water code should be changed to exempt certain projects from the cancellation for ten years of non-use rule. The exemption might include municipal water rights, water rights for steam electric power, water rights associated with major reservoirs, and water rights included as long-term supplies in an approved regional water plan.

State Funding for Water Supply Programs

Continued and Expanded State Funding for Texas Water Development Board Loans and the State Participation Program. The Senate Bill One regional water planning studies show significant needs for future water supply projects. The Texas Water Development Board's loan and State Participation Programs have been important tools in the development of existing supplies. These programs should be continued and expanded with additional funding to assist in the development of the water management strategies recommended in the regional water plans to meet the future water needs in Texas.

State Funding for Water Conservation Efforts. In 2007, the Texas Legislature formed the Water Conservation Advisory Council to serve as an expert resource to the state government and the public on water conservation in Texas. In December 2008, the Council published a report on water conservation in Texas ⁽¹⁵⁾. The report included 11 recommendations, two of which dealt with state funding for water conservation efforts:

- Provide the Council with the necessary resources to sufficiently develop and implement tools to monitor implementation of water conservation strategies recommended in the regional water plans.
- Expand public awareness of water conservation statewide and coordinate campaigns at the state, regional, and local levels (by adequately funding a statewide water conservation campaign).

We encourage adequate funding for the Water Conservation Advisory Council and for a statewide water conservation awareness campaign.

State Funding for Reservoir Site Acquisition. The State of Texas has designated unique sites for reservoir development. As the recent creation of a Federal wildlife refuge in the Fastrill Site demonstrates, the designation of these sites does not fully protect them

for development as reservoirs. We recommend that TWDB and the Legislature consider assisting with the acquisition of these sites. Actions that could be taken include:

- The use of state funds to acquire reservoir sites.
- Changing TWDB regulations so that Water Infrastructure Fund resources can be used for the acquisition of reservoir sites before completion of the permitting process.
- Encouraging voluntary sales of land in these reservoir sites to entities planning to develop the reservoirs.

Consider Alternative Financing Arrangements for Large Projects. The Texas Water Development Board offers low-interest financing for development of projects from the State Water Plan through the Water Infrastructure Fund. TWDB also offers deferred financing with delayed requirements for repayment, but the terms for deferred financing are not as flexible as they might be. We encourage the Texas Water Development Board and the Legislature to consider more flexible deferred financing, modeled on the old Federal program in which debt repayment could be made as portions of the project were needed and brought on line.

Adequate Funding of Groundwater Conservation Districts. In recent years, the Texas Legislature has created a great number of new groundwater conservation across the state. Especially in the early years of their existence, many of these districts struggle to find adequate resources to develop and implement their rules. We recommend that the state fund a grant program to provide financial resources for the development of the initial rules of these districts.

Funding for NRCS Structures as a Form of Watershed Protection. One key element of water supply planning is the protection of the quality and usability of supplies already developed. Over the past 50 to 60 years, the U.S. Natural Resources Conservation Service (NRCS, formerly the Soil Conservation Service) has built numerous small dams for sediment control and flood control in Texas. The NRCS reservoirs improve water quality and prevent erosion in the watershed, and they also provide water for livestock and increased streamflows during low flow periods. The design life for the majority of the NRCS watershed dams is 50 years. Most of the projects were built in the 1950s and 1960s and are nearing the end of their design life. Many NRCS structures are in need of maintenance or repair in order to extend their useful life.

The Dam Rehabilitation Act ⁽¹¹⁾ funds the rehabilitation and upgrade of existing NRCS structures. Every year, the NRCS accepts applications for funding such projects and prioritizes them. The rehab program is a 65/35 split of federal funds to the sponsor's funds. Currently, in the Region C area, ten NRCS structures are being planned, designed or constructed with funding through the dam rehabilitation act.

The Small Watershed Act ⁽¹²⁾ allocates federal funds for the development of new NRCS structures. The federal government provides 100% of the construction costs and the sponsor provides the land acquisition costs. Eight projects in Region C are being planned, designed, or constructed. Several of these projects are ready to construct, but the funding is not currently available.

The State should develop a program to provide funding for the development and rehabilitation of new and existing NRCS structures, as a form of watershed protection.

Elements of such a program could include:

- State grants or matching funding for studies of NRCS structures
- Seminars on watershed protection.

The Region C Water Planning Group recommends that the State seek additional federal funding to improve and maintain NRCS structures. Region C also recommends that the State provide funding to local sponsors to aid them in paying for their required 35% of the cost for the dam rehabilitation projects.

Water Reuse and Desalination

Support for Research to Advance Reuse and Desalination. Water reuse and desalination are becoming increasingly important sources of water supply for Texas. We recommend that the Legislature and the TWDB support research to advance these emerging water supply strategies in the coming years.

Funding Assistance for Desalination Projects. In December 2002, the TWDB completed a report ⁽¹³⁾ for Governor Perry recommending a large-scale demonstration seawater desalination project. This project will result in greater information available to Texas on the challenges involved in developing large-scale desalination projects. However, many smaller communities could make use of brackish groundwater or surface water if the treatment process was more affordable.

The Red River and Lake Texoma in Region C have high concentrations of salts. The water from these sources must either be blended with a less saline supply or desalinated for direct use. The smaller communities neighboring these water supplies could potentially use this water with help in funding the necessary desalination process. These sources would be more economical for the smaller communities than building small pipeline of great lengths to purchase water from a larger supplier. Region C recommends that the TWDB provide funding assistance for desalination projects for smaller communities. Region C also recommends that federal funds be sought for desalination projects.

Funding Assistance for Water Reuse Projects. The Region C Water Plan includes reuse as a key water management strategy to meet the water needs of the Region between now and 2060. Water reuse projects are rapidly developing in Region C. In the *2006 Region C Water Plan*, the 2060 supply from existing reuse projects was slightly over 103,000 acre-feet per year. In the current plan, newly developed projects have more than tripled the 2060 supply from reuse, to almost 331,000 acre-feet per year. The plan also calls for development of an additional 292,000 acre-feet per year in reuse projects. In addition to Region C, the *Water for Texas 2007* Plan 14 of the 16 regions included reuse as a water management strategy. In order to achieve implementation of the significant quantities of reuse there is a critical need to develop implementation approaches, funding support, and the technology and science associated with reuse. The Texas Water Development Board is in the process of developing a research agenda to identify specific research needs and potential projects to address these issues and develop information that will advance reuse in Texas.

Region C recommends that the State Legislature to provide funding support to perform critical research needs to be identified by the Texas Water Development Board.

State and Federal Programs – Water Supply Issues

Continued and Increased State Support of Efforts to Develop Water Supplies for Oklahoma. In recent years, water suppliers in Region C have been seeking to develop unused water resources in Oklahoma. The Tarrant Regional Water District has filed a suit in Federal Court challenging an Oklahoma moratorium on the export of water from the state. The Texas Attorney General recently filed an *amicus curiae* brief supporting TRWD's

suit. We encourage the State of Texas to continue and increase its support of efforts to develop unused water resources in Oklahoma.

Oversight of Groundwater Conservation District Rule Making. The Legislature has established groundwater conservation districts across Texas, often without regard for aquifer boundaries. These groundwater conservation districts develop rules and regulations regarding groundwater pumping within their boundaries. Often, the rules that have been developed by these districts are inconsistent from one district to the next, resulting in inconsistent regulation of the same aquifer. Although one-size-fits all regulations are inappropriate, the groundwater conservation districts need state oversight, particularly with regard to their rule-making policies. Region C recommends that the TWDB or TCEQ provide oversight for the current and future groundwater conservation districts.

Revise Federal Section 361(b) Regulations on Power Plant Cooling Water. Recent USEPA regulations implementing Section 316(b) of the Clean Water Act designate cooling towers for new power plants. The USEPA is also currently developing new regulations that could result in a requirement for adding cooling towers at existing power plants. Compared to once-through cooling (which was the usual approach in Texas prior to the new regulations), cooling towers reduce the amount of water diverted for a power plant but significantly increase the amount of water consumed. There is also a secondary impact; operation of cooling towers creates a high TDS (total dissolved solids) wastestream known as blowdown, that must be managed and/or treated, often resulting in additional increased water consumption. This higher water consumption is not good for Texas, where water supplies are scarce. We encourage TWDB and TCEQ to work with the Federal government on Section 316(b) regulations to allow the efficient use and conservation of water supplies for power plants and the state.

CHAPTER 8 LIST OF REFERENCES

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- (3) Freese and Nichols, Inc., Alan Plummer Associates, Inc., Chiang, Patel & Yerby, Inc., and Cooksey Communications, Inc.: *Region C Water Plan*, prepared for the Region C Water Planning Group, Fort Worth, January 2001.
- (4) U.S. Fish and Wildlife Service, *Texas Bottomland Hardwood Preservation Program*, Albuquerque, 1984.
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- (6) Chiang, Patel and Yerby, Inc.: *2005 Update - Long Range Water Supply Plan*, Dallas, December 31, 2005.
- (7) Texas Water Development Board and Water Conservation Implementation Task Force, *Report 362 Water Conservation Best Management Practices Guide*, Austin, [Online] Available URL: <http://www.twdb.state.tx.us/assistance/conservation/TaskForceDocs/WCITFBMPGuide.pdf>, November 2004.
- (8) Texas Water Code, Chapter 11 Water Rights, Subchapter E, Section 11.173, Amended by Acts 2001, 77th Leg., ch. 966, § 2.12, eff. Sept. 1, 2001, Austin, [Online], Available URL: <http://www.capitol.state.tx.us/statutes/wa.toc.htm>, May 2005.
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